

3 ANALYSING THE RESULTS

3.1 Overview

The results of the survey can be analysed in a number of ways depending on the circumstances in which it was conducted and the requirements placed on it by the lead organisation. In general, the analysis profiles the organisations concerned in such a way that capacity-building activities can be planned in a consistent and transparent manner. This is especially true if the analysis is to be used to allocate or redistribute resources, for instance financial resources. Typical outputs from the analysis include a status report, a dataset catalogue and a summary of institutional partnerships.

It is tempting to see the survey results as a pool of data suitable for statistical analysis. For example, one might determine that 43% of the organisations surveyed were equipped with the Windows operating system, whereas only 10% were equipped with UNIX. Similarly, one might determine that 15% of organisations managed biological datasets, whereas only 5% managed data on human social conditions. Whilst these statistics help identify general trends across many organisations, they do not assist significantly with the planning process. Indeed, the main reason for conducting the survey is to determine the **capabilities and needs of individual organisations** to enable strategic planners to identify specific investments, efficiencies and areas for increased cooperation.

3.2 Status Report

At minimum, the main results of the survey should be summarised in a report suitable for distribution to participating organisations. This injects transparency into the survey process and compensates organisations for their efforts in completing questionnaires. If successful, the status report could be updated on a regular basis and form the main vehicle for documenting the growth of the network.

Simple diagrams, maps, charts, and tables may be used to express how information management capacity is distributed across the organisations surveyed. Typical questions that the report may wish to address include:

- What range of datasets is available to the network and in which areas are data lacking?

- What (if any) standards are applied to the collection, storage and quality-assurance of data?
- What expertise is available and in which areas do the greatest shortages occur?
- What range of facilities is available and what specific facilities are needed?
- Which facilities are in common use across the network (e.g. software and hardware, laboratory equipment, communications facilities)?

In addition, the status report highlights areas of duplicated effort, areas requiring closer cooperation, and under-utilised capacities which could be mobilised in support of the network's goals. These topics could be covered within a more comprehensive discussion of the network's strengths and weaknesses, which might also summarise the productivity (or otherwise) of the partnerships between individual organisations. Narrative text, as opposed to charts and tables, is usually the best form in which to present these more subjective assessments of information management capacity.¹

Optionally, the status report could also contain specific plans for developing information management capacity (e.g. investments, efficiencies and cooperation). This is the realm of strategic planning (see Section 4), where available capacity is compared with what is needed to enable the network to deliver relevant and timely information products to its user base. The actual survey data, if presented at all, is usually consigned to annexes or included as a separate volume. Naturally, an executive summary should be prepared to highlight the report's key findings.

3.3 Dataset Catalogue

Potentially the most useful output of the survey is a catalogue or directory of datasets (Medyckyj-Scott *et al.* 1996). This helps users to **locate the data and information they require**, and provides sufficient description for them to decide whether or not the dataset is appropriate to their needs (for example, see WCMC 1994 or Government of Sri Lanka 1996a). If a dataset catalogue is to be generated from the survey results, it is suggested that a **separate form** is prepared for describing

¹ Ample time should be provided for participating organisations to review the report before it is published and distributed widely.

datasets. If this is done, the dataset catalogue can be assembled easily by collating and editing the dataset forms when they are returned, without needing to extract this information from lengthy institutional details (see Annex 2). Naturally, brief details of the custodian should be included on each such form to facilitate access to the data by prospective users (see Volume 5).

Not all datasets described in the questionnaires need to be included in the catalogue. For example, there is little point including those which, for reasons of corporate policy or lack of capacity, are not physically accessible to external users. In addition, datasets which are so specialised that they have little bearing on the network's goals may be excluded. The aim is to create a catalogue that presents a set of **useful datasets**, as opposed to an exhaustive list. This, together with accuracy, will build the reputation of the catalogue. In summary, the following questions may be asked of the final catalogue:

- Does it enable users to locate datasets easily?
- Are all the listed datasets relevant to the network's goals?
- Are all the listed datasets accessible?
- What mechanism has been established to keep the catalogue up to date?

Dataset catalogues can be published in several ways, for example as hard-copy publications, as computerised databases or as an on-line information service, and may be disseminated widely to promote their use (electronic versions are often referred to as **metadatabases**, since the raw data are metadata or, literally, data about data). As the profile of the catalogue rises, and it becomes the main method by which users locate data, many organisations will wish to submit new details to keep the catalogue up to date. In this way, the catalogue can become virtually self-sustaining, rather than relying on specific project funds or donations.

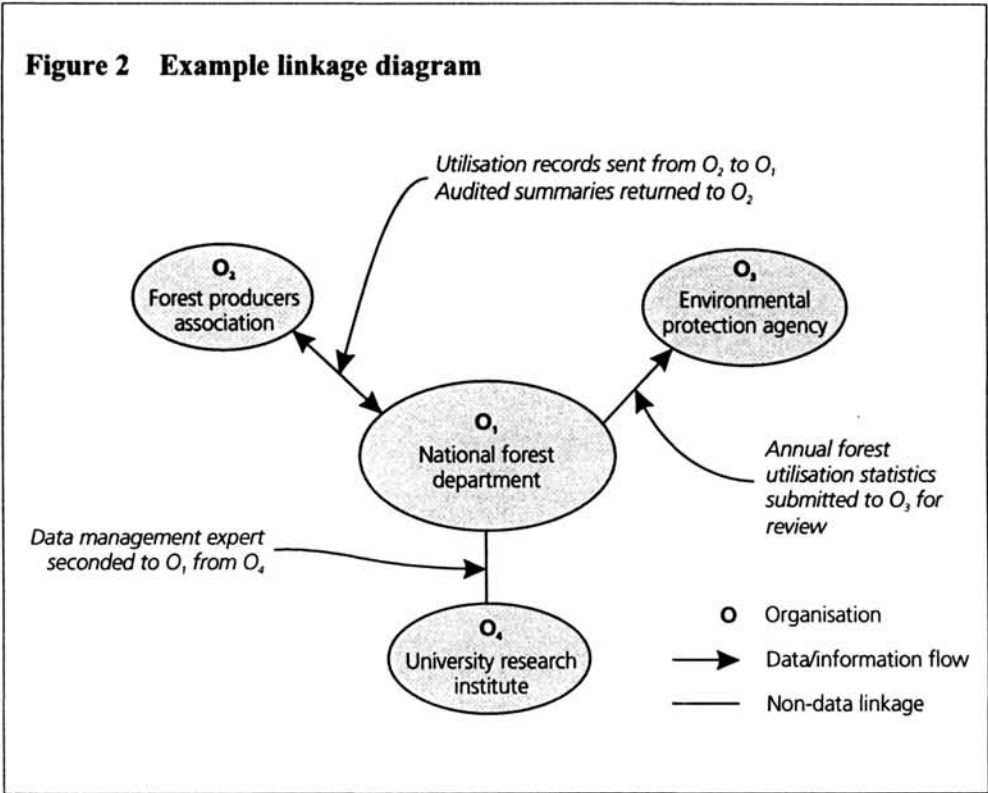
3.4 Analysis of Linkages

Cooperation between organisations, variously referred to as linkages, ties, partnerships and collaborations, can be represented using special-purpose diagrams, such as the one shown in Figure 2. The diagrams follow a convention in which organisations are represented by ovals and paths of data flow by arrowed lines. Standard lines depict other types of cooperation, such as the sharing of expertise or

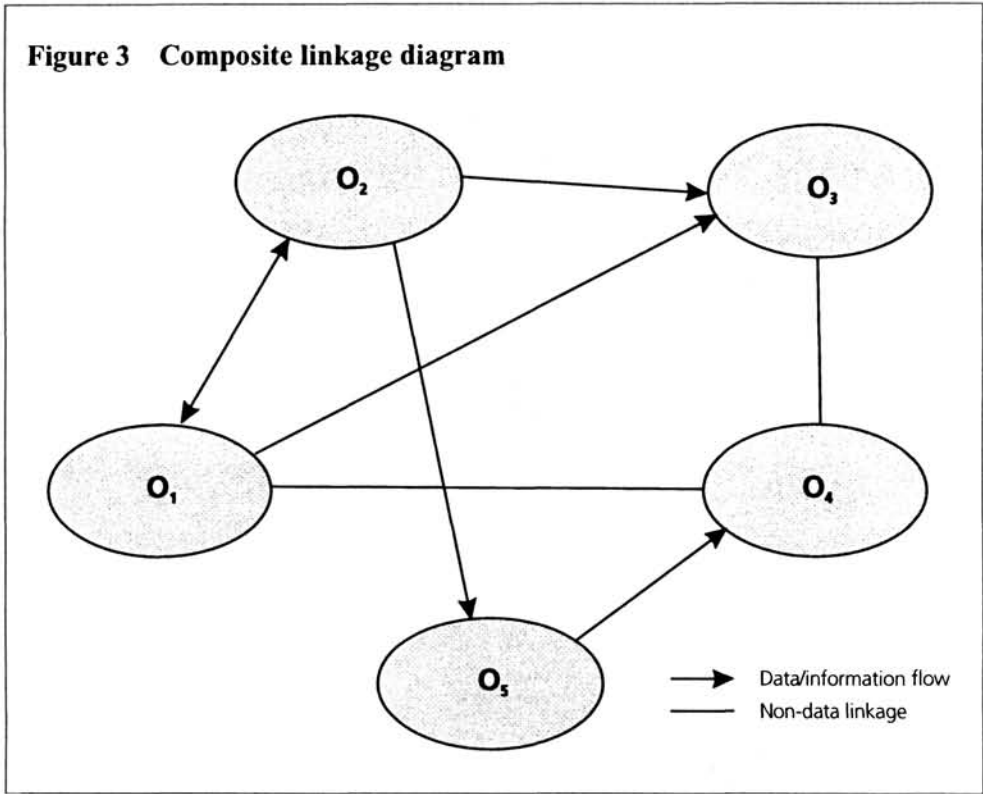
facilities. Labels expressing the general nature of the cooperation may be used to clarify the diagram as shown.

Figure 2 illustrates how a national forestry department (labelled O_1 in the diagram) views its linkages with other selected organisations. In this case it receives data from the forest producers association (O_2), an industry body, and provides data back to this organisation and the environmental protection agency (O_3). A non-data linkage is maintained with a university research institute (O_4), in this case involving the secondment of a member of staff.

Similar diagrams could be produced by all those organisations participating in the survey, revealing interesting inconsistencies when two organisations perceive their inter-relationships in different ways. For example, in the current case O_1 may illustrate its provision of data to O_3 (see Figure 2), but the latter may not recognise this if the supply is uninformative or unreliable.



As well as providing a good opportunity for self-assessment within an organisation, linkage analysis can be applied at the network-level to reveal areas requiring closer cooperation, or areas where duplication of effort may be occurring. To do this, the linkage diagrams produced by individual organisations must be reviewed, harmonised and merged into a single composite diagram, such as that shown in Figure 3. This may involve significant dialogue between the organisations concerned as they agree a common position on the nature of their linkages (each linkage in the composite diagram should be acknowledged to be correct by both parties).



The composite diagram is a useful way of summarising the linkages between a group of cooperating organisations. However, when large numbers of organisations are involved, the diagram can quickly become overloaded. Thus, for clarity, it may be necessary to separate it into a series of simpler diagrams representing cooperation on specific themes.

Composite diagrams can be interpreted in several ways. For example, organisations which generally supply data may be important **custodians**. Organisations which generally receive data may be important **users**; and organisations which generally maintain non-data linkages may be important **facilitators** of the information production process (see Volumes 4 and 5). Notable absences of cooperation are equally revealing, particularly between organisations which are known to possess similar goals (and may be duplicating each other's efforts) or have complimentary skills and equipment which could be shared. In summary, linkage analysis clarifies where cooperation **is occurring** and, also, **where it could be occurring**.